

A Message from the Under Secretary for Science

The publication of the 8th Volume of the *Journal of Undergraduate Research* presents striking evidence of the Department of Energy's support for the next generation of scientists and engineers. The body of knowledge contained in this issue of the *Journal* reflects the creativity and commitment of hundreds of young minds. We hope the excitement of discovery they have experienced will inspire them to continue their scientific studies. If our Nation is to remain at the forefront of science and technology, a condition for our continued economic vitality and energy security, it is essential that we develop this reservoir of talent.

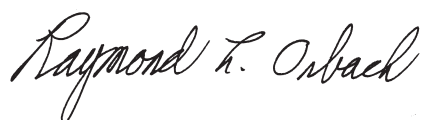
This issue of the *Journal* contains an impressive collection of articles and abstracts. Research topics range from high energy physics to genomics to nanoscience, and include many other leading areas of modern scientific inquiry. These contents reflect only a portion of the support the Department of Energy's Office of Science provides to basic research. In addition, the quality of the papers attests to the importance of Office of Science contributions to scientific discovery.

Office of Science supported research enables the U.S. to maintain its competitive edge. It transforms our energy future, supports our national security, and elucidates the fundamentals of matter and energy. All of the research described in this *Journal* was conducted at the Department of Energy's 17 national laboratories, a critical resource for our Nation's scientific needs.

The nurturing and recruitment of extraordinary scientific and technical talent is essential if the Department is to continue to serve our Nation. This 8th Volume of the *Journal of Undergraduate Research* reflects but one of the Department's ongoing efforts to develop this critical resource.

More than 650 undergraduate women and men were awarded research internships at the Department of Energy's national laboratories during 2007. These men and women will become the nucleus of our Department's and Nation's scientific and technical work force. This issue of the *Journal* summarizes and makes available to the scientific and lay communities the results of their research. In addition, these contributions demonstrate the skills and accomplishments of these young scientists.

As Under Secretary for Science, I again express my pride in the achievements of these extraordinary young minds. I thank them for their dedication to science and for their accomplishments. I wish them well for an exciting future.



Raymond L. Orbach
Under Secretary for Science
U.S. Department of Energy



